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3. *Stegosauria Monograph*.—Mr. F. W. Lucas has completed a preliminary outline for his memoir on the Stegosauria, covering principally the materials preserved in the U. S. National Museum. Mr. Lucas has succeeded in bringing together materials for a corrected restoration of *Stegosaurus*, which differs in important particulars from the restoration by Professor Marsh. It is understood that a model of the animal is in preparation for the St. Louis Exposition.

4. *Sauropoda Monograph*.—The first steps in the preparation of this monograph by Professor Osborn have been taken in the collection of additional material, especially in the Como region of Wyoming, where a deposit, unexampled for richness, has been explored and surveyed under his direction during the past six years. Explorations and studies by Messrs. J. B. Hatcher and E. S. Riggs have also greatly enriched our knowledge of these gigantic reptiles. Two entirely new forms of sauropoda have been discovered, and our knowledge of the forms already known has been extended, so that there is reason to hope that the monograph will contain a complete presentation of the skeleton of several of the known genera of these animals.

The exact stratigraphic work on the Jurassic was begun in the year 1901–2 and was provided for by an appropriation, but unfortunately has been interrupted by the inability of Dr. F. B. Loomis, of Amherst College, to survey the chief section at Cañon City owing to other duties. His sections of the Como region and the Black Hills region have, however, been completed and published by the American Museum of Natural History. Professor Eberhard Fraas, of Stuttgart, is also engaged in the study of the notes and collections made with Professor Osborn in the Jurassic, during 1901–2. He reports that his detailed comparison with the European Jurassic is nearly completed.

5. *Geological Results in Previous Years*.—In the spring of 1901 Mr. Barnum Brown accompanied Professor Lester F. Ward on a short trip into the Lower Trias of Arizona, and secured a number of valuable vertebrate remains, especially of the Phytosauria and

Labyrinthodontia, among the latter the genus *Metopias*, which was found for the first time in this country. This collection is in the National Museum.

In 1902 Mr. N. H. Darton of the Survey accompanied by Mr. J. B. Hatcher and Professor Eberhard Fraas visited the *Titanotherium* beds of South Dakota with reference to the establishment of the geological levels of the various species. Mr. Hatcher was able to confirm and greatly extend his previous observations in connection with the Survey, finally establishing the stratigraphic succession of the greater number of the species of Titanotheres.

6. *Progress of Vertebrate Paleontology in America*.—This branch of science covers such a broad field, and the collections made by explorations in the west are so extensive and are multiplying so rapidly, that it is gratifying to report that the number of specialists engaged in the field, in museums and in research work, has rapidly increased, there being now upwards of twenty-five workers. A division of subjects and the friendly cooperation of different institutions have been brought about. Some of these researches, especially those of Prof. S. W. Williston on the pleiosaurs, are on so large a scale that their publication should be undertaken by the government. H. F. O.

SCIENTIFIC NOTES AND NEWS.

DR. G. W. HILL, of Nyack, N. Y., has been elected a corresponding member in the section of astronomy of the Paris Academy of Sciences.

THE Nobel prizes, each of the value of about \$40,000, were awarded in Christiania, on December 10. The prize in physics was divided between M. Becquerel and M. and Mme. Curie, of Paris. The prize in chemistry was awarded to Professor Arrhenius, of Stockholm; the prize in medicine to Dr. Finsen, of Copenhagen, and the prize in literature to Dr. Björnstjerne Björnson, of Christiania. The formal distribution of the prizes took place in the presence of the King and several members of the royal family and a distinguished gathering. A program of music was performed and the usual speeches de-

livered, after which the prize-winners present, MM. Becquerel, Arrhenius and Björnsen received their prizes, with the diploma and Nobel gold medal, from the hands of the King. The absent prize-winners, Professor Finsen and M. and Mme. Curie, were represented by the Danish and French Ministers. It may seem somewhat ungracious to call attention to the fact that three of the four recipients are Scandinavians, whereas Nobel wrote in his will 'I expressly direct that in the award of prizes no attention whatever shall be paid to nationality, so that only the most worthy shall receive the prize, whether he be a Scandinavian or not.' It is also the case that, contrary to the express directions of Nobel's will, about half the income of the fund has been diverted to local uses.

SIR WILLIAM RAMSAY, of London, will give a course of lectures during the summer session at the University of California on 'The Constituents of the Atmosphere and the Emanations from Radium.'

PROFESSOR GEORGE W. HOUGH, of Northwestern University, has been elected an associate member of the Royal Astronomical Society.

PROFESSORS BOVERI (Würzburg), Fürbringer (Heidelberg), Hilbert (Göttingen), Graf zu Solms-Laubach (Strassburg), Weber (Strassburg) and Wiesner (Vienna), have been elected corresponding members of the Munich Academy of Sciences.

WE regret to learn that Dr. Finsen, of Copenhagen, well-known for the discovery of the light treatment of lupus, is dangerously ill.

PROFESSOR L. C. MIALl has been elected Fulmerian professor of physiology at the Royal Institution, London.

DR. H. A. BUMSTEAD, assistant professor of physics at Yale University, will spend a year at Cambridge working in the laboratory of Professor J. J. Thomson.

PROFESSOR W. D. HALLIBURTON, F.R.S., of London University, will give the Herter lectures at New York University in the coming year. He has chosen as his subject 'The

biochemistry of muscle and nerve.' The lectures will commence on January 4, 1904.

THE second Phipps lecture, delivered by Dr. Osler, of the Johns Hopkins University, on December 3, had for its subject 'The Home in its Relation to the Tuberculosis Problem.'

DR. ALEXANDER HUMPHREYS, president of the Stevens Institute of Technology, gave an address on 'The College Graduate as Engineer,' in the College of the City of New York, on December 15.

DR. NORDENSKJÖLD gave a lecture at Buenos Ayres, on December 9, at the Teatro Politeama, in which by the aid of a magic lantern he gave a detailed account of his Antarctic expedition. He stated that he would make known the scientific results of his expedition later, having as yet had no time to coordinate them. M. Skottsberg, the naturalist of the party, gave a full description of the loss of the *Antarctic*.

WE learn from *Nature* that the Rev. T. R. R. Stebbing, F.R.S., has been elected zoological secretary, and a member of the council, of the Linnean Society in succession to Professor G. B. Howes, F.R.S., who has had to retire on account of ill health.

THE tercentenary of the death of William Gilbert, which occurred on November 30, 1903, was celebrated by the British Institution of Electrical Engineers. Papers were read by M. Hospitalier, and Dr. Behn-Eschenburg, and a picture was presented to the city of Colchester, where he was born.

THE body of Herbert Spencer was cremated at Hampstead, on December 14. The Hon. Leonhard Courtney, M.P., made an address. The trustees under Spencer's will are the Hon. Auberon Herbert, Dr. Charlton Bastian and Dr. David Duncan. The executors are Mr. Charles Holme, proprietor of the *Studio*, and Mr. Frank Lott, of Burton-on-Trent. As is generally known, Spencer's autobiography was left stereotyped and ready for the press, and its early publication may be expected.

BENJAMIN FRANKLIN KOONS, professor of natural history and curator of the Museum of the Connecticut Agricultural College, died at

Storrs, Conn., on December 17, at the age of fifty-five years.

WE learn from the London *Times* that a meeting was held on December 10 at the Phototherapeutic Institute, Copenhagen, in celebration of Professor Finsen's success in obtaining the Nobel prize for medicine. It was announced that Professor Finsen had decided to give 50,000 kroner from the amount awarded to him to the institute, and that two members of the governing body would each present it with a like sum.

THE following bill has been introduced into the House of Representatives by Mr. Shafroth and referred to the committee on coinage weights and measures.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That on and after the first day of January, nineteen hundred and five, all the Departments of the Government of the United States, in the transaction of all business requiring the use of weight and measurement, except in completing the survey of public lands, shall employ and use only the weights and measures of the metric system; and on and after the first day of January, nineteen hundred and six, the weights and measures of the metric system shall be the legal standard weights and measures of and in the United States.

THE following are the lecture arrangements at the Royal Institution before Easter: A Christmas course of lectures (illustrated by lantern slides and adapted to a juvenile auditory) on Extinct Animals, by Professor Ray Lankester; Professor L. C. Miall, Fullerian professor of physiology, R.I., six lectures on the Development and Transformations of Animals; Mr. E. Foxwell, three lectures on Japanese Life and Character; Dr. E. A. Wallis Budge, two lectures on the Doctrine of Heaven and Hell in Ancient Egypt, and the Books of the Underworld; Mr. G. R. M. Murray, three lectures on the Flora of the Ocean; Mr. A. D. Hall, three lectures on Recent Research in Agriculture; Professor H. L. Callendar, three lectures on Electrical Methods of Measuring Temperature; Mr. Sidney Lee, two lectures on Shakespeare as Contemporaries knew him; Mr. J. A. Fuller-Maitland, three lectures on British Folk-Song (with vocal illustrations);

Mr. W. L. Courtney, two lectures on Comedy: Ancient and Modern; and six lectures by Lord Rayleigh on Physics. During the season 1904 the lectures on Tuesdays and Thursdays will be delivered at five o'clock, and the Saturday lectures at three o'clock. The Friday evening meetings will begin on January 15, when a discourse will be delivered by Lord Rayleigh on Shadows; succeeding discourses will probably be given by the Rev. Walter Sidgreaves, Mr. D. G. Hogarth, Mr. Alfred Austin, the Dean of Westminster, Mr. H. Brereton Baker, Mr. Alexander Siemens, Professor W. Stirling, Professor F. T. Trouton, Mr. Henry Arthur Jones, Professor Dewar, and other gentlemen.

SIR NORMAN LOCKYER, as we learn from the London *Times*, was the chief guest at the annual dinner of the Sheffield University College on Friday night, December 4. His recent address at Southport as president of the British Association was followed, he said, by 200 leading articles in the newspapers. A great majority of those articles were in favor of the views that he urged, one of those views being that a considerable sum should be set apart by the nation so as to put its educational house in order. Some objections were raised to that address. There was the question of the sum necessary to do this educational work. The sum he estimated as necessary in relation to the actual conditions at the various centers of learning was the sum, capitalized, of £24,000,000—not 24 millions a year. He did not ask for the making of eight new universities; he merely pointed out that England had a commerce to defend and was determined to defend it; that we had gone about that task in a common-sense way and were resolved to be twice as strong as our neighbors, and, carrying out that principle, had built a two-power navy; and he simply suggested that universities were as important in one direction as battleships were in another, and it seemed rather a pity that, if in the matter of battleships England was going to be twice as strong as one power, we should be content to remain only half as strong as one power in regard to universities. There was another critic of his scheme who called it grandiose. But he would like to point out that 24 millions at 2½ per.

cent. only meant getting an income of £480,000 a year. That sum of £480,000 was just about half the sum which the German government passed over every year to the German universities. Could it be said that half the sum that Germany gave to her universities was 'grandiose'? Was it not rather mean? Another objection to his Southport address was that he began at the wrong end—with the universities instead of with primary education. But surely, when the British government had in the last thirty years spent 420 millions sterling on primary schools, primary education could be regarded as the affair of the government and very properly left in its hands. He at any rate did not wish the stream of education to be dammed in any way by anything. Let every British child begin at the best primary school it could get, and end, if it was capable, at the best university it could get.

THE Government of India reports, according to an abstract in the London *Times*, that in 1901 more human beings were killed by wild animals than in any year since 1875 except one, and reached a total of 3,651, while last year it was 2,836, and the number of deaths from snake-bite was 23,166. Tigers killed 1,046 persons, of which 544 occurred in Bengal, 65 being in a single district. This was due to the depredations of a man-eater, for the destruction of which a special reward was offered without avail. In another district where 43 persons were killed most of them fell victims also to a man-eater. Wolves slew 377 persons last year, of whom 204 were killed in the United Provinces. A campaign was undertaken against these animals in Rohilkhand and the Allahabad division, and they have been almost exterminated in Cawnpore district, where they used to abound. 80,796 cattle were killed by wild animals last year, and 9,019 by snakes. Tigers killed 30,555 of these, leopards 38,211, and wolves and hyenas most of the remainder. On the other hand, rewards were paid last year for the destruction of 1,331 tigers, 4,413 leopards, 1,858 bears, 2,373 wolves, and 706 hyenas, while the number of snakes killed for reward was 72,595.

UNIVERSITY AND EDUCATIONAL NEWS.

MR. ATWOOD MATTHEWS has bequeathed £5,000 each to the general funds of the university and of Trinity College, Cambridge, and the Hon. George Charles Brodrick has bequeathed £4,000 and his pictures and engravings to Merton College, Oxford, of which he was warden.

MARSH HALL, occupied by the Yale Forest School was injured by fire on December 11, the loss being estimated at about \$10,000.

THE College Entrance Examination Board of the Middle States and Maryland, which was organized three years ago to direct the entrance examinations of the principal colleges and universities in the east, has extended its influence to such a degree that it has now dropped the qualifying phrase and is now 'the College Entrance Examination Board.' The examiners for the current year include the following: *Mathematics*—Chief Examiner, Professor Frank N. Cole, Columbia University; Associates, Professor Thomas C. Esty, University of Rochester, and Dr. Arthur Schultze, De Witt Clinton High School, New York City. *Physics*—Chief Examiner, Professor Edward L. Nichols, Cornell University; Associates, Professor Francis C. Van Dyck, Rutgers College, and Frank Rollins, Morris High School, New York City. *Botany*—Chief Examiner, Professor William F. Ganong, Smith College; Associates, Professor Henrietta E. Hooker, Mount Holyoke College, and Louis Murbach, Central High School, Detroit, Mich. *Chemistry*—Chief Examiner, Professor Leverett Mears, Williams College; Associates, Professor Charlotte F. Roberts, Wellesley College, and Albert C. Hale, Boys' High School, Brooklyn, N. Y.

MR. LEWIS BURTON ALGER, Ph.B. (Michigan), A.M. (Columbia) has been appointed junior professor of education at the University of Michigan.

MR. W. C. FLETCHER has been appointed to the newly established post of chief inspector of secondary schools in Great Britain. Mr. Fletcher was 'second wrangler' at Cambridge in 1886.